

**Practice: 636 - Water Harvesting Catchment****Scenario: #1 - Surface Catchment****Scenario Description:**

Construct an apron, approximately 50 feet wide by 90 feet long, utilizing: a plastic or rubber membrane laid on a prepared ground surface; or an asphalt or concrete surface with curbing; to collect rain water. Divert collected water from the surface catchment by gravity through an 8" diameter, PVC SDR-35 pipe to an existing tank or plastic-lined earthen reservoir. Exclusion of animals is required, so conservation practice 382 - Fencing, may be needed to protect the catchment.

Resource Concern: Livestock production limitation - Inadequate livestock water.

Associated Practices: 382 - Fencing; 614 - Watering Facility; 436 - Irrigation Reservoir; and 521A - Pond Sealing or Lining, Flexible Membrane.

**Before Situation:**

Inadequate water available to address resource concerns. Client hauls water to supply needs.

**After Situation:**

Design and construct an impervious surface as the primary collection component, and a pipe to convey the water to create a reliable water supply for livestock.

**Scenario Feature Measure:** Surface Area of Catchment

**Scenario Unit:** Square Yard

**Scenario Typical Size:** 500

**Scenario Cost:** \$29,976.58

**Scenario Cost/Unit:** \$59.95

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$72.16	12	\$865.92
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.92	72	\$1,362.24
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$32.40	24	\$777.60
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$27.70	12	\$332.40
<b>Materials</b>						
Synthetic Liner, 40 mil	1387	Synthetic 40 mil HDPE, LLDPE, EPDM, etc membrane liner material. Includes materials and shipping only.	Square Foot	\$5.65	4500	\$25,425.00
Pipe, PVC, 8", SDR 35	994	Materials: - 8" - PVC - SDR 35 - ASTM D3034	Foot	\$6.69	140	\$936.60
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$276.82	1	\$276.82

**Practice: 636 - Water Harvesting Catchment****Scenario: #2 - Elevated Catchment****Scenario Description:**

Build a wooden frame, "post-and-pier" structure, with a corrugated metal roof (dimensions are 24 feet wide by 20 feet long), to collect rain water. The structure is supported by 9-each, "poured-in-place", concrete footings (dimensions are 2'x2' square x1' thick), 8 feet on-center, with tie-down straps. Divert collected water from catchment area with guttering and downspout through a 4" diameter PVC Schedule 40 pipe, to a tank (not included )for a reliable storage and subsequent use.

Resource concerns: Livestock production limitation - Inadequate livestock water; Insufficient water - Inefficient use of irrigation water.

Associated practices: 382 - Fence; 614 - Watering Facility; or 436 - Irrigation Reservoir.

**Before Situation:**

Inadequate water available to address resource concerns. Client hauls water to supply needs.

**After Situation:**

The guttering and downspouts collects the roof runoff and the water is conveyed through a pipe, by gravity, to a storage tank for use by livestock or a very small irrigation system. This system is the primary collection component of a Water Harvesting Catchment (CPS 636) facility. Divert collected water from roof with guttering and downspout through a 4" diameter PVC Sch-40 pipe,

**Scenario Feature Measure: Surface Area of Catchment****Scenario Unit: Square Yard****Scenario Typical Size: 53****Scenario Cost: \$7,255.18****Scenario Cost/Unit: \$136.89****Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Concrete, CIP, formed reinforced	38	Steel reinforced concrete formed and cast-in-placed in formed structures such as walls or suspended slabs by chute placement. Typical strength is 3000 to 4000 psi. Includes materials, labor and equipment to transport, place and finish.	Cubic yard	\$390.20	1.5	\$585.30
Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$60.13	4	\$240.52
<b>Labor</b>						
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$32.40	40	\$1,296.00
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$27.06	120	\$3,247.20
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$27.70	1	\$27.70
<b>Materials</b>						
Dimension Lumber, Treated	1044	Treated dimension lumber with nominal thickness equal or less than 2". Includes lumber and fasteners	Board Foot	\$0.83	512	\$424.96
Pipe, PVC, 6", SCH 40	980	Materials: - 6" - PVC - SCH 40 - ASTM D1785	Foot	\$6.59	60	\$395.40
Corrugated Steel, 28 gage	223	Corrugated or ribbed, galvanized, 28 gauge, includes fasteners, materials only.	sq ft	\$1.56	480	\$748.80
Gutter, Downspout, PVC, 5"	1388	5" PVC guttering. Materials only.	Foot	\$0.52	24	\$12.48
<b>Mobilization</b>						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$276.82	1	\$276.82